

Integral Challenge Problems

1. $\int (\sin^{-1} x)^2 dx$

2. $\int x \sin^{-1} x dx$

3. $\int \sin^{-1} \sqrt{x} dx$

4. $\int \frac{1}{1 - \tan^2 x} dx$

5. $\int \ln(\sqrt{x} + \sqrt{x+1}) dx$

6. $\int \frac{1}{x - \sqrt{1-x^2}} dx$

7. $\int \frac{2e^{2x} - e^x}{\sqrt{3e^{2x} - 6e^x - 1}} dx$

8. $\int \frac{1}{x^6 - 1} dx$

9. $\int \frac{1}{x^4 + 4} dx$

10. $\int \frac{1}{x(x+1)(x+2)\cdots(x+n)} dx$